

# OREGON TUALATIN VALLEY AMATEUR RADIO CLUB



An ARRL Special Service Club

August 1991

Next Meeting August 14, 1991

## OTVARC Travelers

By Jerry Mohr, N7KUQ

The next OTVARC campout is scheduled for August 16, 17, and 18 at Memaloose State Park. It is located in the Columbia Gorge in Oregon between Hood River and The Dalles, Oregon.

To get there take I-84 eastbound. You cannot reach the park eastbound but have to go past it and take the next exit (a few miles farther) off of I-84 to turn around. Access to the park is only from the westbound lanes of I-84.

The park has 43 full hook-up sites, 67 tent sites, and bathrooms with showers. Use simplex frequency 145.67 in the vicinity of the park.

The park is named for an offshore Columbia River island used by indians for sacred burial ground.

### Executive Board Meeting

7:00 P.M., August 7, 1991

Valley Conference Center - V.I.P. Room

Members invited for input on important issues

### August Regular Meeting

August 14, 1991

Valley Conference Center - Community Room

9368 S.W. Beaverton-Hillsdale Hiway  
Beaverton, Oregon

Social Hour 6 P.M. to 7 P.M.

Meeting starts at 7 P.M.

## Smoke Gets in Your Eyes

By Alan Churchill, AA7CV

I knew the smell but couldn't quite place it. I had smelled it years and years ago when I was a teenage ham. There was a vague feeling that even though the smell wasn't especially bad, it was usually accompanied by some other event that had bad vibes. Sure enough, only seconds after the smell came across my nose I noticed the thin line of blue smoke from the back of my Heath HW101. Quickly I reached for the on/off switch but since the rig was new to me I turned the mode switch to 'tune' and the 'mic level' to full counterclockwise before finally finding the on/off switch on the 'AF Gain' control. The smell & the smoke went away but I knew the fun had only begun. I was back in ham radio again!

To me, this is the fun part. I was able to take a perfectly good working HW101, make some much needed modifications and come up with a better understanding of electronic theory. Most of the time my theory lessons are accompanied by clues such as smoke and burned insulation. The theory I learned this time was that you can create smoke, heat and melted insulation simply by shorting the 6.3 volt filament line to ground. It's kind of a 3 for 1 deal.

Tube rigs won't last forever though and when I got back into radio again after 30 years away, I found a whole new ballgame. Even the finals are now solid state! It was obvious I would have to learn more about this new technology and what better way than to build something from scratch. Since I had no station at all, a receiver seemed like an ideal beginning. I started with the Handbook and Solid State Design for The Radio Amateur. These two books became my training guides. Since I didn't know anything about solid state design, I knew I would have to select a working design & simply rebuild it. Kind of like a kit without the manual. Upon hearing

(Continued on page 4)

# July Board Meeting Minutes

By Steve Coan, KA7MOW

- I. Meeting brought to order 7:42PM (19:42) - hosted at Ray Deeths home in Banks
- II. Treasurers Report - no change from last month
- III. Newsletter
  - A. Will need a new editor by the end of the year
  - B. Jeff will still do layout, but need someone to get/assemble articles
- IV. Field Day
  - A. over 1000 contact points
  - B. over 900 bonus points
- V. Letters
  - A. SafeWay - Clackamas
    1. Has a proposal for Non-profit organizations
    2. Gift certificates for cash - 3%-5% discount depending on how much sold
  - B. To Jim Schaeffer - from Mayors Office in Portland
    1. Thanks for aid on 4th of July parade
- VI. Wes - K7WG
  - A. Contacted by KGON - their new tower must support at least 10 HAM activities
    1. Our club is 7th on their list
    2. Must be UHF, all VHF slots have been filled
    3. They will supply all connections to their system
  - B. Would like to encourage usage of the 6.90 repeater
    1. There may be a small contribution to Wes for use of his repeater
    2. Targeted mostly for aid in operation (electricity)
    3. Wes does NOT want any more support than that as he would feel that he might lose some control over the repeater
    4. Board will decide on the amount later this year to help him for this past year.
- VII. Sue - N7EPE - Programs
  - A. July general
    1. Tom Hill - Tower raising for July
      - i. 30-35 minute program
    2. Short - on project night - slide presentation
  - B. August general
    1. Roy Lewellan - Baluns - QRP - Phased arrays - Antenna Fundamentals
      - i. Will use antenna fundamentals
    2. Special Guest - no comments at this time on who it is!
  - C. September
    1. Not currently covered
    2. Flea Market?
  - D. October
    1. Larry Holtz
  - E. November
    1. open
  - F. December
    1. Holiday Event - Elections
- VIII. Education
  - A. Bill Vesser - trying to get classes at TEK through PCC
    1. Steve to get contact person for Bill to check it out
- IX. Public Service
  - A. Jim Schaeffer
    1. 21st of July - bike marathon - still needs people
- X. Meeting Location change
  - A. Has had very positive response from majority of those who have talked to the board
  - B. Membership attendance is up - may be a fluke - will keep close tabs on this
  - C. Costs of various locations & restrictions
    1. Valley Conference Center
      - i. \$100 / month
      - ii. NO SMOKING - public place
      - iii. Presently reserved for remainder of this year
    2. P.G.E.
      - i. \$100 / month
      - ii. No long reservations - max 3-4 months / year
        - a. This may be negotiable
    3. Local Churches
      - i. One at 192dn & Alexander - Aloha
        - a. new church - looking for income
        - b. may be cheaper in short run
    4. Elks
      - i. A few members buy dinners to keep the room at no-cost
      - ii. Smoking is allowed
      - iii. Children are discouraged
      - iv. Very little on-site for presentations (over head/slide/etc)
      - v. Access is VERY limited - back door is almost impossible to use
      - vi. Constant discussions with Elks management
  - D. Task force to be assembled
    1. 3 members
      - i. Al Berg
      - ii. Wes Allen
      - iii. Jim Schaeffer
    2. Will look into alternative locations for next year
- XI. General discussion:
  - A. Radio acquired by Ray Deeth for the Emergency Services Trailer
  - B. Acquisition of insurance for radio
  - C. Where to be stored for security
  - D. Availability in emergency situations
  - E. Has been a goal of the club for years
  - F. Only questioned why now & why no regular discussion prior to acquisition
- XII. Flea Market program
  - A. Only what you can carry in in one trip
  - B. No large layouts
  - C. keep it simple & short
- XIII. Meeting adjourned at 9:41PM (21:41)

# OTVARC Field Day Press Coverage

*Reprinted from the Banks Newspaper*

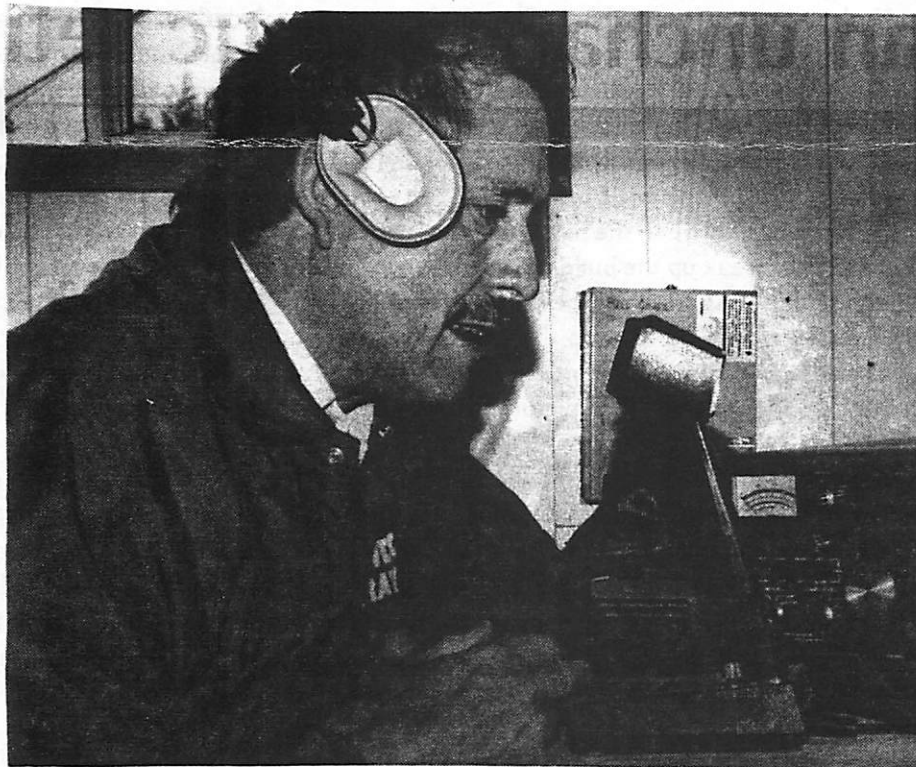
Two ham radio stations in Banks will assume their role this Saturday and Sunday in a national network set up for disasters and other emergencies. One will be manned by general, advanced and expert operators, the other by novice radio operators and technicians.

The demonstration will happen at Banks High School as part of a nation wide test of an emergency radio system. The public is invited to visit and listen and learn more about amateur radio operation.

The Oregon Tualatin Valley Amateur Radio Club will set up two field stations and for 24 hours starting Saturday at 11 a.m. will be contacting as many other amateur stations as possible.

Last year the OTVARC contacted about 2,000 other stations, according to club president Ray Deeth of Banks.

The two radios, one a beginner setup and the other an official emergency communication radio, will be operated on battery power only and will be manned for the entire 24 hours in the simulation of an actual emergency situation.



"During the devastation of Hurricane Hugo and the California earthquake, the world depended on radio amateurs using emergency power to get reports into and out of the stricken areas," Deeth said.

And during the Iraqi War, radio amateurs kept our nation's soldiers in touch with their loved ones back home through the Military Affiliated Radio Systems (MARS), Deeth said.

During the test to be conducted this coming weekend at Banks, the public is invited to visit the radio stations and learn the role they play in the Washington County emergency plan.

There will also be an informational booth set up where people can ask questions about the event as well as the world-wide Amateur Radio Service.

"This event will show you the important differences between professional amateur radio operators and CBers," Deeth said.

All amateur radios are licensed in the public service by the Federal Communications Commission and the OTVARC is regulated by the American Radio Relay League.

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*(Smoke In Your Eyes - Continued from page 1)*

that I had never built anything solid state Wes Hayward even suggested I buy a kit but I never have been able to take sound advice even when given by someone whose advice I have sought. The receiver I selected was in the 1989 Handbook starting on page 30-8 so I knew it must be a good one.

I have built this receiver four times now. This article will go into the methods I selected and present the benefits of each method.

**Dead Bug Style:** This was my first attempt. Using a 6" X 9" sheet of copper clad PC board, I simply used the copper as a ground plane. Everything that needed to be grounded was soldered to the board. All interconnections were made in the air above the board. This is also called "ugly board construction" which is a much better description of what your finished product looks like. I found that although it was fast to construct, you are left with a rats nest of tiny wiring that is nearly impossible to debug & completely impossible to replace parts in. This method works well if you know what you're doing but for someone new to construction I found it to be a constant frustration. Time to start over.

**PC Board Style:** My next attempt got me back to the normal PC style of construction. Using several perfed boards I was able to build the whole receiver in about a month. But there was a major disadvantage in this style too. It took twice as much space as dead bug style and no matter what size board I started with my wiring always ran one set of holes past the edge of the board. I thought of buying a 11 X 17" board and building a crystal calibrator in the center of it just to see if I would run out of holes. I'm sure I would have. The whole process reminded me of playing Scrabble. Once you get started off in one direction your circuit just seems to grow in that direction regardless of space available. As least Scrabble lets you trade in tiles to see if you can get something going in another direction. The other problem with this style of building is that when you change your mind about parts placement, the parts are all but ruined. The leads are cut short and (in my case) they have suffered as much heat as they are going to take. Time to start over.

**IC Header Style:** Oh boy, now we're cooking. This style uses cheap little 16 pin IC headers which are just the right size to hold 1/4 watt resistors and other parts between the pins. With some planning you can usually get one circuit on each header. This method allows you to break up the building of a really complex receiver into a series of 1 hour projects. In the receiver described here, I used about 25 of these little wonders. They allow a high degree of density on the board, are easy to build & rebuild, allow you to redo the entire layout of your project, are easily removed for testing and most importantly, break your project down into little pieces. This means you may actually finish the project rather than getting it half done and giving up. The pictures show just how neat these are.

**Board One - AF, IF & BFOs:** The entire 80 meter receiver is contained on only two 3-1/2 X 8" boards. This represents less space use than ever the dead bug style of construction. I mounted the boards on edge and plugged them into a motherboard which serves as a wiring conduit only. I found the plugs at Norvac for \$2 a pair in the surplus section. I separated the AF from the IF from the BFOs so I could put a little vertical shielding in place if needed. Like the motherboard, all the components are mounted on the IC headers and the board serves only as a wiring conduit. This also means if I decide to build this receiver again as part of a transceiver I can simply redo the sockets on the new PC board. The whole receiver is already built and working on IC headers.

**Board Two - VFO, Crystal Filters & Preselector:** The VFO needs lots of mechanical stability so I screwed the tuning capacitor right onto the shield board itself and then mounted the PC board onto the shield board. Alignment is critical here because the shaft of the tuning capacitor goes directly into the tuning dial. Measure twice! I mounted the Crystal Filters up on this board because they needed to be close to the USB/LSB switch and I had room on the board. The Preselector is also mounted on this board. I used the same dial for preselector tuning as the VFO because I thought it looked nice. Once I got the rig running I found that wasn't too smart. A one-to-one ratio is all that is needed or desired but once holes are cut in aluminum....

*(Smoke In Your Eyes - Continued on page 5)*

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*(Smoke In Your Eyes - Continued from page 5)*

**Board Three & Four - Converters:** These are optional boards. If all you want is a single band receiver, you don't need these boards. If you want multiple bands though, you need converters. Like the other boards, I used IC headers. To eliminate a large bandswitch, I did bandswitching with diodes. See QST Jan 91 Page 24 for details.

As for the power supply, I just brought a connector out the back. I could have built a little supply in but last year at SeaPac I found a little 1/2 amp supply for \$6 so I use that underneath the desk. The whole receiver measures only 9 X 4 X 9 so it doesn't take up much room in the shack. The next version will have an S meter, noise filters, notch filter, attenuator and a better audio section. Such is the joy of building.

*Editors Note: Alan supplied several pages of schematics and layout drawings with this article. They did not copy well, and could not be included in this issue of the newsletter. He has a notebook in which he has fully documented this project. If you are interested in building any type of radio, I suggest you contact him and look through his documentation.*

*I think his experiences would make a great 'short presentation' at an up coming OTVARC meeting. Thanks for the great article Alan!*

### Wanted:

Used synth. 2-meter hand held.  
Mark Juenemann, P.O. Box 247  
Carlton, OR 97111.  
Days - (503) 627-6678  
Evs - (503) 852-7369

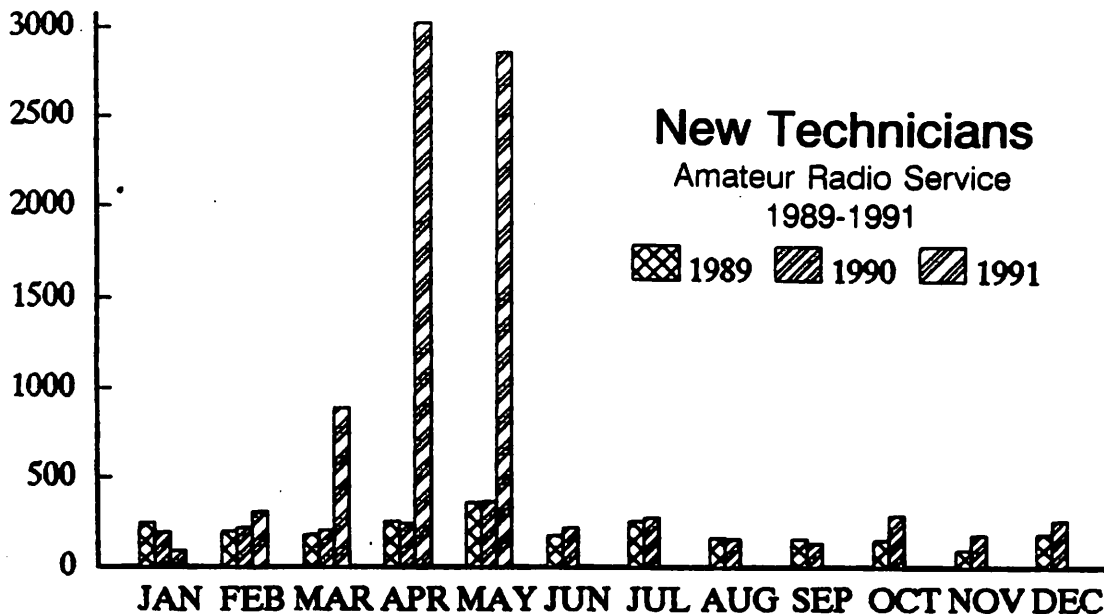
### For Sale:

Cushcraft Vertical AT8  
Charles, K7OZM, 642-3384

## MINI SWAP NIGHT

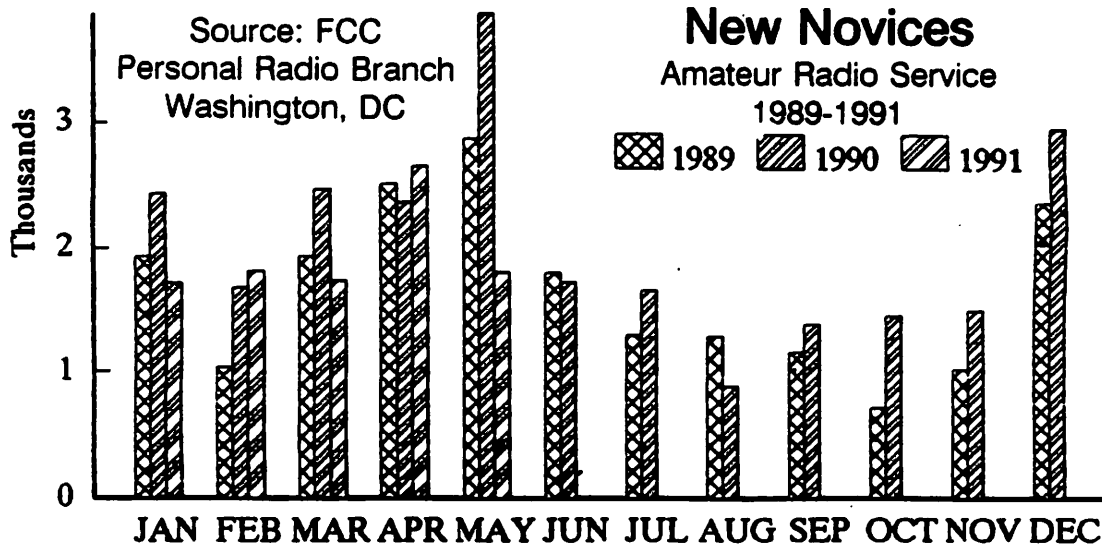
*Here is your chance to sell those few little items you don't need and get that great bargain you have been searching for. No table fees, no lengthy setup, no big deal, just some fun.*

**Date:** September 11, 1991, at the September OTVARC meeting  
**Time:** 6:00 P.M. until 7:15 P.M. and at the meeting break  
**Cost:** None, just bring your stuff  
**Space:** Each person gets 2 feet of floor space along the wall.  
**Signup:** Call Alan Churchill at 639-5660 or Sue Benson at 640-1989  
**Signup By:** September 1, 1991  
**Eligible:** OTVARC paid up members only.  
**Little Stuff:** Inside the meeting room.  
**Big Stuff:** Tailgating near the meeting room door.

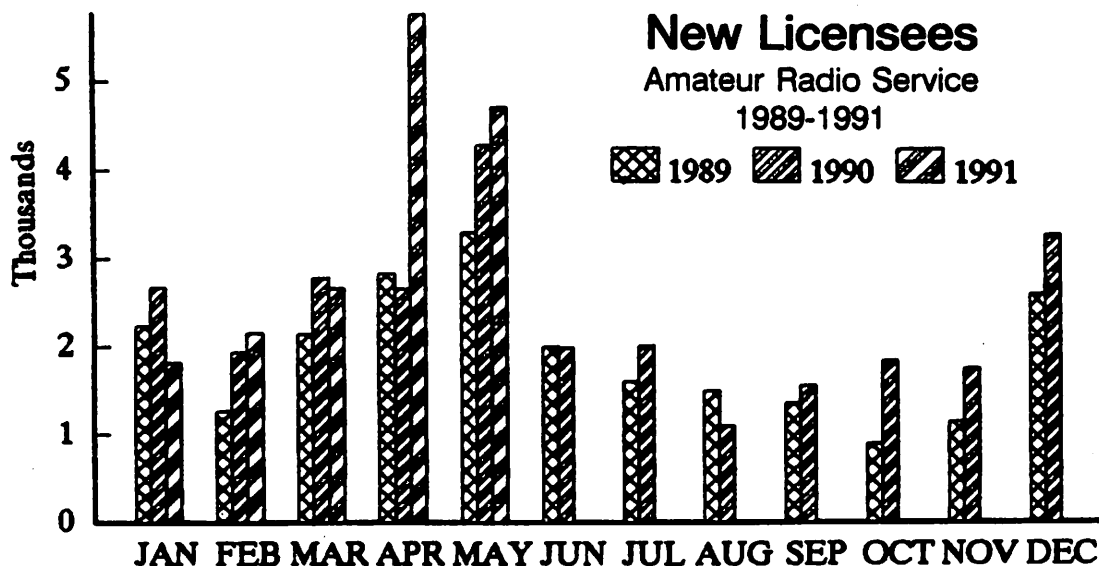


During Fiscal Year 1991, there was an average of 208 new Technicians per month; in FY-1990, 218. The first **Codeless Technician** license was issued on March 12, 1991. Since then the number of new Technicians has skyrocketed by more than ten times the previous monthly average.

There was more than a 50% increase in the number of examination elements administered in March and April 1991 versus a year ago. May 1991 saw more than double the number of applicants tested and exam elements administered. VE's, VEC's and the FCC have indeed been very busy keeping up.



While the number of new Novices increased 14% in April 1991, there are substantially less new examinees joining the ranks at the Novice level than a year ago. Note the drastic reduction in May 1991 new Novice operators vs. 1990 and 1989. It is apparent that most applicants are choosing the Codeless Technician route to enter ham radio!



Last year an average of 2,315 applicants a month joined the ham ranks for the first time. (1,922 in FY-1989.) During the past 60 days over 10,000 ham operators got their initial license. And more examinees are passing the tests! The pass rate has jumped by 6% (66% vs. 60%) since February 14, 1991.

## Upcoming Events

August 14	OTVARC Club Meeting
August 16,17	OTVARC Travelers Campout Memaloose State Park
August 23, 24	Hood To Coast Relay
September 11	OTVARC Club Meeting <i>SWAP MEET!</i>
September 20, 21	OTVARC Travelers Campout Silver Falls State Park, OR
September 24	Project Night
October 9	OTVARC Club Meeting
October 18, 19	OTVARC Travelers Campout Pacific City 1000 Trails, OR
October 29	Project Night
November 13	OTVARC Club Meeting
November 15, 16	OTVARC Travelers Campout Depoe Bay Holiday RV Park

The **OTVARC NEWSLETTER** is published monthly by the Oregon Tualatin Valley Amateur Radio Club, Inc.

The opinions, views and recommendations of its contributors are not necessarily those of the Club, it's officers, advertisers or the Editorial Staff.

Articles or letters may be submitted to:

Jeffrey A. Durr, KA7AKU, Editor  
17615 N.W. Country Drive  
Portland, Oregon 97229.

Deadline for all material is the 20th of the preceding month.

All correspondence other than for this newsletter should be sent to:

Oregon Tualatin Valley Amateur Radio Club  
Post Office Box 5132  
Aloha, Oregon 97006-0132.

Meetings are held on the second Wednesday of each month.

## OREGON TUALATIN VALLEY AMATEUR RADIO CLUB

### Executive Board

Feel free to contact the Board of OTVARC to answer any questions you may have.

President:	Ray Deeth	K7VDQ	324-4502
Vice Pres:	Sue Benson	N7EPE	640-1989
Secretary:	Steve Coan	KA7MOW	646-5271
Treasurer:	Ken Gilbert	WR7D	292-3497
Trustee:	Wes Allen	K7WWG	649-3295
Trustee:	Al Berg	WB7SIC	640-5456
Trustee:	Lynn Hurd	WB7UNU	649-9152
Trustee:	Alan Roehl	KO7B	292-5243
Trustee:	Jim Schaeffer	KB7ADH	245-2518

### Other Club Contacts

#### Club Trailer / Club Equipment / Technical:

Dee Lynch	KA7NPN	646-4580
Terry Biggs	WB7CHK	648-3687

#### Contests:

John Koenig	NB7W	641-3575
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#### Health and Welfare:

Al Berg	WB7SIC	640-5456
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#### Public Service:

Randy Stimson	KZ7T	297-1175
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#### Newsletter:

Jeff Durr	KA7AKU	645-3205
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#### Project Night:

Terry Biggs	WB7CHK	648-3687
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#### Scholarships:

Pat Griffiths	KA7UFG	649-0837
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#### Travelers:

Jerry Mohr	N7KUQ	646-4027
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**Post Office Box 5132**  
**Aloha, Oregon 97006-0132**

*Address Correction Requested*

